

SECTION III—REMARKS

This amendment is submitted in response to the Office Action mailed 14 December 2009. Claims 1, 4-10, 19, 21-27 and 28 are amended, and claims 1-10 and 19-30 remain pending in the application. Applicant respectfully requests reconsideration of the application and allowance of all pending claims in view of the above amendments and the following remarks.

Rejections Under 35 U.S.C. § 103

The Examiner rejected claims 1-10 and 19-30 under 35 U.S.C § 103(a) as unpatentable over combinations of one or more of the following references: U.S. Patent No. 5,986,348 to Fukano (“*Fukano*”); U.S. Patent No. 4,983,804 to Chan *et al.* (“*Chan*”); and U.S. Patent No. 6,618,267 to Dalal *et al.* (“*Dalal*”).

Applicant respectfully traverses the Examiner’s rejections. To establish a *prima facie* case of obviousness, the Examiner attempts to combine prior art elements according to known methods to yield predictable results. To apply this rationale, the Examiner must articulate the following:

(1) a finding that the prior art included each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference;

(2) a finding that one of ordinary skill in the art could have combined the elements as claimed by known methods, and that in combination, each element merely would have performed the same function as it did separately;

(3) a finding that one of ordinary skill in the art would have recognized that the results of the combination were predictable; and

(4) whatever additional findings based on the Graham factual inquiries may be necessary, in view of the

facts of the case under consideration, to explain a conclusion of obviousness.

(underlining added). MPEP § 2143 (8th Ed., Rev. 6, 2007). For at least the reasons explained below, Applicant submits that the Examiner has not established a *prima facie* case of obviousness under the above rationale.

Claim 1 was rejected as unpatentable over *Fukano* in view of *Chan*. As amended, claim 1 recites a microelectronic assembly comprising:

a substrate having bonding pads disposed on a mounting surface thereof, the bonding pads including a ferromagnetic material therein;

a solidified solder disposed on the bonding pads;
and

a surface mount component bonded to the substrate by way of the solidified solder and *including a magnetized magnetic layer disposed on a substrate side thereof*, the magnetized magnetic layer to cooperate with the ferromagnetic material in the bonding pads to establish a magnetic force of a sufficient magnitude to hold the surface mount component on the substrate before and during soldering.

(italics added). The Examiner alleges that *Fukano* discloses every element of this claim except for a surface mount component including a magnetic layer. To make up for this deficiency in *Fukano*, the Examiner cites *Chan* for its alleged disclosure of a surface mount component including a magnetic layer, and concludes that it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine *Fukano* with *Chan* to arrive at the claimed invention.

Applicant respectfully disagrees. *Chan* discloses localized soldering by inductive heating. In Fig. 4, *Chan* discloses a microelectronic assembly including a printed circuit board 10 with conductive pads 34 and 35. Solder balls 32 and 33 are formed on the

conductive pads and each solder ball has a ferromagnetic material embedded therein. *Chan* indicates that in an alternative embodiment of Fig. 4, ferromagnetic material could be deposited on the bottom of package 42 adjacent to the pads (col. 5, lines 9-11), but nothing in *Chan* indicates that the ferromagnetic material within solder balls 32 and 33, or the ferromagnetic material that could be deposited on the bottom surface of package 42, is or should be magnetized. *Chan* therefore cannot disclose, teach or suggest a surface mount component bonded to the substrate by way of solidified solder and “including a magnetized magnetic layer disposed on a substrate side thereof.” The Examiner concedes that *Fukano* also does not disclose such a feature, meaning that a combination of *Fukano* with *Chan* does not disclose every element of the claim and cannot render the claim obvious. Applicant therefore respectfully requests withdrawal of the rejection and allowance of the claim.

Claim 19 was rejected as unpatentable over *Fukano* in view of *Chan*. As amended, claim 19 recites a surface mount component bonded to bonding pads of a substrate by way of solidified solder, the surface mount component including:

a magnetized magnetic layer disposed on a substrate side thereof, the magnetized magnetic layer to cooperate with a ferromagnetic material in the bonding pads to establish a magnetic force of a sufficient magnitude to hold the surface mount component on the substrate before and during soldering.

(italics added). As discussed above for claim 1, neither *Fukano* nor *Chan* discloses, teaches or suggests a surface mount component including “a magnetized magnetic layer disposed on a substrate side thereof.” Because neither *Fukano* nor *Chan* discloses, teaches or suggests this feature, a combination of these two references cannot disclose

every element of the claim and therefore cannot render the claim obvious. Applicant therefore respectfully requests withdrawal of the rejection and allowance of the claim.

Claim 28 was rejected as unpatentable over *Fukano* in view of *Chan* and further in view of *Dalal*. As amended, claim 28 recites a system comprising:

a microelectronic assembly including:

a substrate having bonding pads disposed on a mounting surface thereof, the bonding pads including a ferromagnetic material therein;

solidified solder disposed on the bonding pads, and

a surface mount component bonded to the substrate by way of the solidified solder *and including a magnetized magnetic layer disposed on a substrate side thereof*, the magnetized magnetic layer being adapted to cooperate with the ferromagnetic material in the bonding pads to establish a magnetic force of a sufficient magnitude to hold the surface mount component on the substrate before and during soldering; and

a main memory coupled to the microelectronic assembly.

(italics added). As discussed above for claims 1 and 19, neither *Fukano* nor *Chan* discloses, teaches or suggests a surface mount component including “a magnetized magnetic layer disposed on a substrate side thereof.” *Dalal* also does not disclose such a feature, meaning that a combination of *Fukano*, *Chan* and *Dalal* cannot disclose every element of the claim and therefore cannot render the claim obvious. Applicant therefore respectfully requests withdrawal of the rejection and allowance of the claim.

Regarding claims 2-10, 20-27 and 29-30, if an independent claim is non-obvious under 35 U.S.C. § 103, then any claim depending therefrom is also non-obvious. MPEP § 2143.03; *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). As discussed above, claims 1, 19 and 28 are in condition for allowance. Applicant respectfully submits that claims 2-10,

20-27 and 29-30 are therefore allowable by virtue of their dependence on allowable independent claims, as well as by virtue of the features recited therein. Applicant therefore respectfully requests withdrawal of the rejections and allowance of these claims.

Conclusion

Given the above amendments and accompanying remarks, all claims pending in the application are in condition for allowance. If the undersigned attorney has overlooked a teaching in any of the cited references that is relevant to allowance of the claims, the Examiner is requested to specifically point out where such teaching may be found. Further, if there are any informalities or questions that can be addressed via telephone, the Examiner is encouraged to contact the undersigned attorney at (206) 292-8600.

Charge Deposit Account

Please charge our Deposit Account No. 02-2666 for any additional fee(s) that may be due in this matter, and please credit the same deposit account for any overpayment.

Respectfully submitted,

BLAKELY SOKOLOFF TAYLOR & ZAFMAN LLP

Date: 15 March 2010

/Todd M. Becker/

Todd M. Becker

Attorney for Applicant(s)

Registration No. 43,487

Blakely Sokoloff Taylor & Zafman LLP
1279 Oakmead Parkway
Sunnyvale, California 94085
Phone: 206-292-8600
Facsimile: 206-292-8606